

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ABSORPTION OF N SUB2 O SUB3 FROM GASES CONTG. 10-11 VOL. PERCENT N SUB2 O SUB3 BY 84-92PERCENT H SUB2 SO SUB4 IN PACKED COLUMNS AT 30-60DEGREES, THE RATE CONST. OF THE ABSORPTION (WHOSE ABS. VALUES WERE SIMILAR TO 3-15 G-(M PRIME2 HR TORR)) DECREASED SHARPLY WITH INCREASING TEMP. AND DECREASED WITH DECREASING INITIAL N SUB2 O SUB3 CONC. IN THE GAS, WITH INCREASING INITIAL CONC. IN THE LIQ. PHASE, AND WITH DECREASING ACID CONC.; UNDER THOSE CONDITIONS, THE MAX. N SUB2 O SUB3 CONCNS. ATTAINED WERE 12.93 AND 11.3 WT. PERCENT IN 92 AND 84PERCENT H SUB2 SO SUB4, RESP. FACILITY: GOR'K. POLITEKH. INST. IM. ZHDANOVA, GOR'KI, USSR.

UNCLASSIFIED

USSR

Nam, B. P., D'yakov, I. G., Ivanov, V. I., Pozdnyakov, V. V., Rezontov, B. I.,
Gorbul'skiy, L. F., USSR Author's Certificate Number 358397, Filed 25/07/70,
Published 18.01/73.

750° , $1.7 \cdot 10^{-7}$ at 840° , $2.7 \cdot 10^{-6}$ at 930° and $8.3 \cdot 10^{-6}$ at 1000° .

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USSR

UDC 621.382/.3.004.13

IVANOV, V.I., AKSENOV, A.I.

"Noncased Semiconductor Devices And Special Features Of Their Use"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 4, Moscow, "Sov.radio," 1972, pp 31-40 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B372)

Translation: Design variations and the technological protection of noncased [beskorpusnyy] semiconductor devices are considered. The special features of their assembly and protection in integrated hybrid microcircuits are presented, as well the principal parameters of a number of transistors and diodes in non-cased fulfillment. Recommendations are made with respect to the use of noncased semiconductor devices in integrated hybrid microcircuits. 4 ill. 2 tab. 1 ref. Summary.

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Environmental Pollution

USSR

IVANOV, V. I., Main Administration of Tire Industry

"Measures on Improvement of the State of Water Basin Carried Out at the Tire Industry Plants"

Moscow, Kauchuk i Rezina, No 7, 1973, pp 1-2

Abstract: Due to the need for fresh water supply and the emission of contaminated sewage, one of the more effective means of improving the state of water reservoirs is by lowering the consumption of fresh water and increasing the water recirculation systems at the plants. Cases of positive action and some problem cases are cited. Several regulatory measures are reported based on recirculation, prevention of emissions into local waterworks, prepurification of industrial sewage, etc.

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USSR

UDC: 621.374.5

YAKIMENKO, V. I., IVANOV, V. I., RUSAK, Yu. M.

"A Device for Delaying Radio Pulse Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319060, Division H, filed 5 Feb 70, published 28 Oct 71, p 173

Translation: This Author's Certificate introduces a device for delaying radio pulses. The unit contains a control signal oscillator, a controlling signal pickup and a multistage delay channel where each stage consists of a delay line with uniformly distributed taps, a tap commutator, a memory unit and multichannel analyzer controller. As a distinguishing feature of the patent, the precision and stability of delay are improved by connecting the inputs of the analyzers for all stages of the channel through switches gated by the controlling signal pickup to the corresponding inputs of the tap commutators, the inputs of the reference channels being connected through a switch gated by the controlling signal pickup to the control signal oscillator. The outputs of the analyzer channels are connected

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USSR

YAKIMENKO, V. I. et al., Soviet Patent No 319060

through the corresponding junctions of the memory and controller module to the appropriate inputs of the tap commutators.

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USSR

UDC: 621.396.67.001.24

LOBKOVA, L. M., IVANOV, V. I.

"Some Results of the Theory of Receiving Antennas"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t
svyazi. Vyp. 4 (Materials of the Scientific and Technical Con-
ference of Leningrad Electrical Engineering Institute of Com-
munications--collection of works, No 4), Leningrad, 1971, pp
156-159 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3B5)

Translation: The field distribution in the focal plane of a
receiving antenna is studied on the basis of the theory of
linear circuits. It is shown that the resultant field in the
focal plane can be determined on the basis of the theorem of
convolution. Bibliography of one titles.

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IVANOV, V. I.

USSR

Metallurgy

USSR

ED-731

-69-

Rpt 18 Dec 61

The Authors of the Following Works Were Nominated for Lenin Prizes
in Science and Technology for 1962:

In the Field of Metallurgy:

[Cont from card 68, see LEYZEROVICH, G. Ya., same date]

"DEVELOPMENT AND APPLICATION OF A METHOD FOR ROASTING ZINC
CONCENTRATES IN A FLUIDIZED BED". Authors: (contd)

BLYUDNEV, A. I.;

KOSTIN, V. N.;

KAYDAK, A. M.;

RUPPUL', V. K.;

SKACHKOV, B. I.;

IVANOV, V. I.;

DZESTELOV, K. S.;

GOSTIYEV, G. B.; and

CHUMAK, Z. V. Sponsor: State Scientific Research Institute for
Nonferrous Metals

[Cont on card 70, see MATEVOSYAN, P. A., same date]

Izvestiya, 18 Dec 61 (Ev Ed)

52
(9)
as

Lubricants and Lubrication

USSR

UDC: 621.9.079:621.892

LEVIN, I. M., Candidate of Technical Sciences, VOVK, A. I., IVANOV, V. I., and
GORENSHTEYN, M. M., Candidate of Technical Sciences

"New Lubricating-Cooling Liquid"

Moscow, Mashinostroitel', No 6, Jun 73, p 31

Abstract: A new lubricating-cooling liquid was developed at the Zhdanovskiy Metallurgical Institute for use in the mechanical processing of aluminum and its alloys (author certificate No 293041). It is a new emulsion of surface-active synthetic substances with the following composition: 0.5-1 percent synthetic wax (complex esters of synthetic fatty acids and high-molecular alcohols), and 0.5-1 percent alkylolamides of C_{10} -- C_{16} fraction synthetic fatty acids. The new lubricating-cooling liquid withstood the drop method corrosion testing, and does not have a disagreeable odor, and is not toxic. Comparative tests were conducted involving the new lubricating-cooling liquid, skipidar, castor oil, and ordinary five percent water emulsion. The MI-1K friction machine was utilized with the specimen roller equipped with the VK6 grade hard alloy and the other made from the AD-1 grade aluminum. The MPR-2 microscope was used to measure the width of the band of adhering material on the specimens. The results show that the new lubricating-cooling liquid is equivalent in its properties to skipidar. In drilling, the new liquid reduces metal sticking to the cutting edges in compari-

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USSR

LEVIN, I. M., et al, Mashinostroitel', No 6, Jul 73, p 31

son to the five percent emulsion. The new liquid is recommended for the mechanical processing of aluminum and its alloys and is being currently used at metallurgical plants in the cold rolling process.

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AM / 18-46 / 5-421 73
Dec 72 67

Since the tests were conducted at various times of day and orbital inclination, the authors point out that their data indicate the spatial and time variation in the magnetosphere channel.

Denevskiy, Ye. A., L. V. Gritskovich, and V. I. Ivanov. Simultaneous measurement of electron concentration and collision frequency in the ionospheric D-region, using a partial reflections method. IVUZ Radiofiz, no. 5, 1972, 695-702.

In a related earlier work the authors described initial results in measuring electron density N in the D-layer by obtaining the correlation coefficient between backscatter of the ordinary and extraordinary wave components (IVUZ Radiofiz, no. 9, 1971, 1452). In that paper the feasibility of simultaneously determining the collision frequency ν from the same data was postulated; in the present article this is verified theoretically and experimentally. The analysis assumes a rectangular transmitted pulse τ at frequency ω and a sufficiently directional beam so that, neglecting absorption in the scattering medium, the correlation coefficient for both wave components may be found from

$$\rho_{xy} = \frac{\ln X}{X^2}, \quad (1)$$

where $X = kL(\mu_0 - \mu_x)$; μ_0 and μ_x are refractive indices of the ordinary and extraordinary components; $L = cr/2$; and $k = \omega/c$.

Graphical results of $\rho(\nu)$ are presented for an assumed set of τ based on Eq. (1), and calculated for transmitted frequencies of 3 and 5.75 MHz. It is shown that with the assumed simplifications

100000 V. I.

USSR

SIMONOV, V. D., IVANOV, V. I.

"The Economic Factor in Determining Optimal Chlorination Conditions"

Dokl. Neftekhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. o-va im. D. I. Mendeleyeva [Reports of Petrochemical Section, Bashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], No 6, 1971, pp 295-300 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3N586 by N. S. Ivanova).

Translation: A dependence is concluded for processes of exhaustive chlorination of C_4 and C_5 hydrocarbons in an acid fluidized bed, particularly for the process of production of hexachlorobutadiene, relating the cost of the product with the degree of conversion of the material and the height of the reactor.

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USSR

UDC 669.245'27'296:669.018.2:669.018.6

NAM, B. P., D'YAKOV, I. G., POZDNYAKOV, V. V., REZONTOV, B. I., and IVANOV, V. I.

"Preparation of Vacuum-Melted Ni-W-Zr Alloys for Oxide Cathode Bases and Their Investigation in Experimental Instruments"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Collection of Scientific and Technical Works on Materials), 1970, vyp. 2, pp 9-15 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1857 by the authors)

Translation: The authors describe the preparation of Ni-W-Zr alloys with impurity content $\leq 0.05\%$ intended for use as oxide cathode bases of electric vacuum devices. Some physical and mechanical properties of the alloys under study are presented, as well as test results of the alloys in experimental diodes. From the standpoint of assuring stable protracted operation of an oxide cathode, the alloy Ni + 4%W + (0.06-0.1)%Zr possesses the best properties. This alloy has a high recrystallization temperature and high strength at operating temperatures.

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USSR

UDC 669.35.018.52:669.018.2

ZYRYANKIN, G. A., IVANOV, V. I., NAM, B. P., and BOLGOV, I. S.

"Some Results of the Development of Hardened Vacuum-Melted Copper-Base Alloys With High Electric Conductivity"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Engineering. Collection of Scientific and Technical Works on Materials), 1970, vyp. 2, pp 20-25 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I844 by the authors)

Translation: The article considers the influence of microalloying additions Zr, Ti, Cr, Ni, Be, and B on the elevation of strength properties of vacuum-melted Cu at 400-600°. The alloys Cu-Zr (0.1-2.0%), Cu-Zr (0.03-0.08%)-Ti- (0.005-0.010%), and Cu-Zr (0.05-0.10%)-Cu (0.05-0.10%) possess good mechanical properties at 400-600°, preserving high electric conductivity (95% or more of the electric conductivity of pure Cu) and technological effectiveness.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SYNTHESIS OF
1,5,DIALKOXY,1,3,5,TRIMETHYL,1,3,5,TRIPHENYLTRISILOXANES -U-
AUTHOR-(03)-KUZNETSOVA, A.G., IVANOV, V.I., GOLUBTSOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 706
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SILOXANE, ORGANIC SYNTHESIS, AZEOTROPE, CATALYST, BENZENE
DERIVATIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0867 STEP NO--UR/0079/70/040/003/0706/0706
CIRC ACCESSION NO--AP0124530
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124530

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CYCLO,(MEPHSIO) SUB3 (I) IS CONVERTED VERY RAPIDLY IN ALC. INTO A 1:1 ADDUCT OF TYPE RO(MEPHSIO) SUB3 R AND H SUB2 O; CLEAVAGE OF THIS ADDUCT WITH 2 MOLES ROH TO A DISPERSED MIXT. OF RO(MEPHSIO) SUB2 R AND ITS ANALOGS TAKES PLACE MANY HUNDREDS OF TIMES MORE SLOWLY. THIS MADE POSSIBLE A DIRECT SYNTHESIS OF THE FORMER PRODUCTS AS LONG AS H SUB2 O IS DIRECTLY REMOVED FROM THE SITE, BEST AS AN AZEOTROPE WITH ROH OR ROH AND C SUB6 H SUB6. THUS, 40.9 G I AND 35 ML ABS. ETOH HEATED WITH 25 ML C SUB6 H SUB6 AND 0.01-02 ML CONCD. HCL O SUB4 CATALYST (HCL OR ALUMINOSILICATE MAY BE USED ALSO) SO AS TO EFFECT CONTINUOUS DISTN. OF THE AZEOTROPE CONTG. H SUB2 O GAVE 60-75PERCENT ETO(MEPHSIO) SUB3 ET, B SUB1. 179-80DEGREES, D PRIME20 1.0583, N PRIME20 SUBD 1.5150; SIMILARLY WERE PREPD.: 75-86PERCENT PRO(MEPHSIO) SUB3 PR, B SUB1-2 191-6DEGREES, 1.0438, 1.5121; 75-85PERCENT ISO-PRO(MEPHSIO) SUB3 CHME SUB2, B SUB1 179-80DEGREES, 1.0384, 1.5089; 75-85PERCENT BUO(MEPHSIO) SUB3 BU, B SUB1 206-8DEGREES, 1.0294, 1.5080; 75-85PERCENT ISO-BUO(MEPHSIO) SUB3 CH SUB2 CHME SUB2, B SUB1-2 192-4DEGREES, 1.0237, 1.5079; AND 80-90PERCENT MEETCHO(MEPHSIO) SUB3 CHMEET, B SUB1-2 188-94DEGREES, 1.0287, 1.5080.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0132526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. CHAPTER I REMOTE CONTROL OF MAIN ENGINES 6. II CONTROL SYSTEMS OF DIESEL GENERATORS 66. III AUTOMATIC SYSTEMS OF SHIP ELECTRIC POWER PLANTS 101. IV AUTOMATION OF AUXILIARY AND UTILIZATION BOILERS 138. V SYSTEMS IN AUTOMATION OF ELECTRIC DRIVE MECHANISM 170. VI CENTRALIZED EMERGENCY WARNING SIGNALING AND LIGHT PULSE "OTMASHI" 188. BIBLIOGRAPHY 212. THE BOOK CONTAINS TECHNICAL DATA, SYSTEMS AND STRUCTURAL UNITS OF THE MOST COMMON AUTOMATIC SYSTEMS ON RIVER BOATS. IT WAS WRITTEN FOR ENGINEERING TECHNICAL PERSONNEL OF SHIPS, INDUSTRIAL WORKERS AND EMPLOYEES OF DESIGN ORGANIZATIONS. IT IS RECOMMENDED AS A TEXT BOOK FOR STUDENTS OF PEOPLES' UNIVERSITIES.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--INFRARED SPECTROSCOPIC STUDY OF HIGHER HYDRATES OF SULFATES AND
SELENATES OF YTTRIUM, LANTHANUM, AND THE RARE EARTH ELEMENTS -U-
AUTHOR-(03)-PETROV, K.I., VORONSKAYA, G.N., IVANOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 615-21

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, CRYSTAL HYDRATE, SULFATE, SELENATE, RARE EARTH
COMPOUND, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0775

STFP NO--UR/0078/70/015/003/0615/0621

CIRC ACCESSION NO--AP0104221

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104221

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF LN SUB2 (SO SUB4) SUB3 .8H SUB2 O AND OF LN SUB2 (SEO SUB4) SUB3 .8H SUB2 O, WHERE LN EQUALS LA, ND, SM, Y, GO, TB, DY, HO, ER, TM, YB, OR LU, ARE GIVEN AND INTERPRETED. THE SPECTRA REVEAL THAT BOTH SERIES OF COMPOS. HAVE 1 TYPE OF XO SUB4 PRIME2NEGATIVE GROUP (X EQUALS S OR SE). SMALLER SPLITTING OF V SUB3 (F SUB2) OF SEO SUB4 PRIME2NEGATIVE IN COMPARISON TO THAT OF SO SUB4 PRIME2NEGATIVE IS DUE TO THE LOWER ELECTRON AFFINITY OF SEO SUB4 PRIME2NEGATIVE THAN THAT OF SO SUB4 PRIME2NEGATIVE. WITH THE EXCEPTION OF LA SUB2 (SO SUB4) SUB3 .8H SUB2 O WHICH HAS 2 DELTA (H SUB2 O) BANDS, ALL THE INVESTIGATED OCTAHYDRATES HAVE A SINGLE DELTA (H SUB2 O) BAND WHICH CORRESPONDS TO COORDINATED H SUB2 O.

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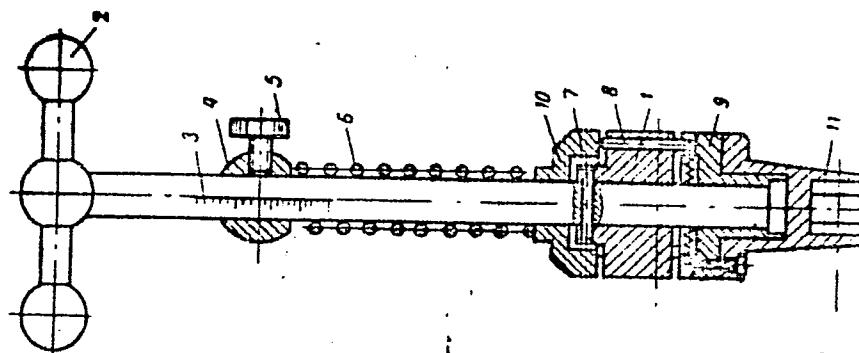
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

240920 DYNAMOMETRIC DEVICE for compressing bone
fragments, includes frame, handle and
spring with calibrated scale indicating pressure
applied, is fitted with a socket wrench 11 with
cam limiter 9. This allows a required pressure
to be applied. The handle is turned until the
index pins 8 start to slip on the cam limiter.
10.2.68. as 1216531/31-16. V.I. IVANOV
(14.8.69.) Bul.13/1.4.69. Class 30a. Int.C1
A61b.

19781629

AA0046422



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19781630

11/2

Acc. Nr:

AP 0034107

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

UR 0075

71758a X-ray diffraction study of lanthanide oxalate hydrates. ~~Vandorova, I.~~ (Inst. Geokhim. Anal. Khim. im. Vernadskogo, Moscow, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 20-32 (Russ). $\text{Ln}_2(\text{C}_2\text{O}_4)_3 \cdot 10\text{H}_2\text{O}$ and $\text{Ln}_2(\text{C}_2\text{O}_4)_3 \cdot 6\text{H}_2\text{O}$ were investigated crystallographically. The $\text{Ln}_2(\text{C}_2\text{O}_4)_3$ have T_2 symmetry. Values of θ , I , and d , of $\text{Ln}_2(\text{C}_2\text{O}_4)_3 \cdot 6\text{H}_2\text{O}$ powder diffraction patterns are given. HMJR

REEL/FRAME

1 18

USSR

UDC 575.23

TIMOFEYEV-RESOVSKIY, N. V., GINTER, Ye. K., GLOTOV, N. V., and IVANOV, V. I.,
Institute of Medico-Biological Problems, Ministry of Health USSR, Institute of
Medical Radiology, Academy of Medical Sciences USSR, Obninsk, and Chair of
Genetics and Selection, Moscow State University

"Genetic and Somatic Effects of X-rays and Fast Neutrons (Experiments on
Arabidopsis and Drosophila"

Moscow, Genetika, No 4, 1971, pp 42-52

Abstract: Fast neutrons (average energy ~ 5.6 Mev, average LET ~ 30 to 35 kev/mcm, dose rate ~ 6 krad/hour) were more effective than x-rays (average energy ~ 0.1 Mev, average LET ~ 1.6 kev/mcm, dose rate ~ 6 krad/hour) in inducing visible sex-linked mutations and recessive sex-linked lethals, loss and nondisjunction of X chromosomes in *Drosophila melanogaster* and recessive embryonal and chlorophyll mutations in *Arabidopsis thaliana* seeds at high spontaneous levels, i.e., the radiation-genetic reactions caused by gene and chromosome mutations. At low spontaneous levels of nondisjunction of X chromosomes in *Drosophila*, the rate of nondisjunction tended to increase with the dose of both x-ray and neutron irradiation, but there were no significant

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USSR

TIMOFEYEV-RESOVSKIY, N. V., et al, Genetika, No 4, 1971, pp 42-52

differences in the effectiveness of the two forms of irradiation. The values of the RBE of fast neutrons in their lethal effect on Arabidopsis and in inhibiting plant growth and development, in decreasing fertility, and in inducing embryonic and chlorophyll mutations were very similar.

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USSR

UDC 536.46:682.61

ZIMONT, V. L., IVANOV, V. K., and OGANESYAN, S. KH.

"Self-Ignition and Combustion Cutoff in a Stagnation Zone During Flow About a Two-Dimensional Projection or Indentation by a Supersonic Fuel-Mixture Stream"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 386-391 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.23. Resume)

Translation: On the basis of the heat mechanism and a gas-dynamic flow model are discussed the critical conditions of combustion cutoff in a stagnation zone formed during the flow of a fuel mixture about a projection and an indentation. The critical conditions of self-ignition are investigated on the basis of the heat mechanism and the chain mechanism. The experimental results of an investigation of mass exchange in such stagnation zones are presented for streams with a Mach number of 2.5. Comparisons of the calculated volume with an experimental one are presented, together with examples of numerical calculations of critical conditions for hydrocarbon-air and hydrogen-air mixtures. 3 figures, 9 references.

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1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DETERMINATION OF ALKALI, ALKALINE EARTH, AND RARE EARTH ELEMENTS BY
STRIPPING ANALYSIS. 1. DETERMINATION OF ALKALI ELEMENTS -U-
AUTHOR-(03)-IVANOV, V.K., STROMBERG, A.G., KAPLIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--Zh. ANAL. KHIM. 1970, 25(3), 584-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RARE EARTH METAL, ALKALI METAL, CHEMICAL ANALYSIS, METAL
ELECTRODE, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0470

STEP NO--UR/0075/70/025/003/0584/0586

CIRC ACCESSION NO--AP0125222

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANODIC PEAKS OF LI, K, NA, Rb, AND CS WITH BU SUB4 NI SOLNS. IN HCONME SUB2 AS SUPPORTING ELECTROLYTES WERE OBTAINED BY ANODIC STRIPPING WITH A HG ELECTRODE. WITHIN THE STUDIED CONCN. RANGE THE HEIGHT OF THE ANODIC PEAKS FOR ALL THE ELEMENTS IS A LINEAR FUNCTION OF THEIR CONCN. (8 TIMES 10 PRIME NEGATIVE 6 5 TIMES 10 PRIME NEGATIVE 5 M). FACILITY: TOMSK POLYTECH. INST., TOMSK, USSR.

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cc. Nr.:

AP0028770

Ref. Code: UR 0050

PRIMARY SOURCE: Meteorologiya i Gidrologiya, 1970, Nr 1,
pp 42-49

AREAS OF MAXIMUM WIND VELOCITY IN TROPOSPHERIC JET STREAMS
UNDER DIFFERENT SYNOPTIC CONDITIONS

V. Kh. Ivanov

In the paper schemes of synoptic conditions are given under which areas of
wind speed maxima in the tropospheric jet streams are observed.

REEL/FRAME

19680207

USSR

UDC: 621.439.253.5-71.001.5

IVANOV, V. L., MANUSHIN, E. I., MIKHAL'TSEV, V. YE.

"Investigation of the Air-Liquid Cooling of Rotor Blades"

Moscow, Vysokotemperaturnye Okhlezhdaniyey Gaz. Turbiny -- Sbornik (High-Temperature Cooled Gas Turbines -- Collection of Works), Mashinostroyeniye, 1971, pp 70-85 (from Referativnyy Zhurnal, Turbostroyeniye, No 1, Jan 72, Abstract No 1.49.105)

Translation: Results are given of cooling system and turbine rotor designs as part of the development of a multistage turbine for a gas temperature on the order of 1450-1500°K. A three-stage variant of a cooled high-temperature turbine was selected. For determining the thermal fluxes in the cooling system, the average surface temperature of the nozzle blade was assumed to be 1073°K, and that of the working blades was assumed to be 873°K. With these parameters heat removal of the cooling system was 3.44 times 10^4 joules/kg; for this, a total air intake of 5% into the cooling system, or a nonreturnable air intake of 5% behind the compressor, was required. The nozzle blades are internally air-cooled; the blades are hollow, with inserted deflectors. In the calculation of the design variant of the rotor, preference was given to a rotor without covering disks. The cooling air is delivered into an annular cavity in the 1/4

USSR

IVANOV, V. L., et al., Vysokotemperaturn. Okhlazhdayemye Gaz. Turbiny -- Sbornik, Mashinostroyeniye, 1971, pp 70-85

disk, and further on into the radiators. The radiator is two-sided, it is made for two-way air passage on each side. The air is delivered to each working blade through openings in the disk into the first half of the radial ribs of the radiator, passes along the inter-rib channels, then changes the direction of its movement by 180° and flows along the second part of the ribbed surface. The air is led out into the flow-through part behind the first-stage disk or into the flow-through part of the turbine. The parameters and dimensions of an experimental single-stage turbine were determined by means of simulation of the first stage of a three-stage experimental turbine. The basic dimensions of the stage and the circumferential velocities are the same in the full-scale stage and in the model stage. The model stage was designed for two kinematically similar regimes, which correspond to a pressure before the stage of 2.6 times 10^5 newtons/ m^2 and 3.92 times 10^5 newtons/ m^2 . Here the flow of air in the crosssection before the combustion chamber comprise, respectively, 3.0 and 5.5 kg/sec when the turbine is operating with counterpressure. When the counterpressure on the model turbine is decreased to the atmospheric value, the pressure before the turbine is stabilized at (1.4-1.50) times 10^5 newtons/ m^2 and the gas flow comprises approximately 2 kg/sec. The average surface

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USSR

IVANOV, V. L., et al., Vysokotemperaturn. Oshlazhdayemyye Gaz. Turbiny -- Sbornik, Mashinostroyeniye, 1971, pp 70-85

temperatures of the nozzle blades and those of the working blades in the model turbine and in the full-scale turbine are identical. Cooling is of the two-circuit, air, liquid type. Six dead-end channels are situated in the blade fin for cooling it. The heat carrier is sodium metal. A procedure for filling and molding the blade cavities with sodium has been worked out. During experimental investigations of the turbine, the temperatures of the blade parts were measured by means of thermocouples, the gas parameters were determined in two-dimensional bands, before and after the turbine stage. The temperature, the total pressure and the static pressure, and the direction of the stream were measured. The turbine power was measured on the basis of the power of a hydraulic brake, and as a control, on the basis of gas parameters. The consumption, temperature, and pressure of the cooling air were measured at the entry and exit in each cooling channel. The braking temperature of the gas at the rotor blade was calculated on the basis of the stage parameters. In order to establish more precisely the heat-removal facilities to the turbine housing, an investigation was made to determine the roles governing heat exchange at this sector. The results of the investigation are generalized by the critical

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USSR

IVANOV, V. I., et al., Vysokotemperaturnye Okhladzhaemye Gazy. Turbiny -- Sbornik, Mashinostroyeniye, 1971, pp 70-85

relationship $K_u = A(0.606 \times 10^{-5} R_g)^{3.4} U/c_{ag}$. Results of experiments at three operating regimes are presented; at gas temperatures before the turbine equal to 1224, 1229, and 1237° K and temperature field of the external surface of the working blades along the profile of the middle cross section. In the preparation of the experiment with the turbine outlet for a calculated temperature of 1473° K, particular attention was devoted to fitting the blade radiators to the recesses in the disk, and tightening the point of contact of the radiators and the disk. Eight figures, one table.

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF GOLD --U-

AUTHOR--(03)--BLSEV, A.I., IVANOV, V.M., GORBUNOVA, N.N.

CCOUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 461-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--GOLD, EXTRACTIVE METALLURGY, PHOTOMETRIC ANALYSIS, SLIME,
ANODIC REFINING

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0480

STEP NO--UR/0075/70/025/003/0461/0465

CIRC ACCESSION NO--AP0126232

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AP0126232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AU IS DETD. BY AN EXTN.

PHOTOMETRIC METHOD BY USING

(4, DIMETHYLAMINOPHENYL) (4, BENZYL METHYLAMINOPHENYL) ANTIPYRYL CARBINOL (CHROMOPYRAZOLE-1) (I). I DISSOLVES IN H SUB2 O GIVING A VIOLET COLOR WITH ABSORBANCE MAX. AT 470-80 AND 600 NM, RESP. I IS EXTD. BY NONPOLAR SOLVENTS. AFTER AU ADDN. THE COLOR DOES NOT CHANGE, BUT THE PHME EXT. HAS AN ABSORBANCE MAX. AT 580 NM. OPTIMUM CONDITIONS FOR COMPLEX FORMATION EXIST AT PH 1.0-2.0 AND A 20-30 FOLD EXCESS OF I. THE ABSORBANCE OF THE EXT. IS PROPORTIONAL TO AU CONC. FOR 0.5-2.5 MUG AU-ML; THE MOLAR ABSORPTIVITY IS (6.08 PLUS OR MINUS 0.07) TIMES 10 PRIME4. I CAN BE USED TO DET. 6.6-1.1PERCENT IN DORE ALLOY, 0.01-0.11PERCENT AU IN THE DUST PRODUCED DURING THE FUSION OF THE ANODIC SLIME, AND 0.0045-0.0670PERCENT AU IN THE SLAG AFTER REMELTING ANODIC SLIME. AU CAN BE DETD. WITHOUT SEPN. FROM OTHER ELEMENTS DIRECTLY AFTER DISSOLN. OF THE SAMPLE. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF PALLADIUM BY
5,2,THIAZOLYLAZO,2,6, DIHYDROXYPYRIDINE -U-
AUTHOR-(03)-IVANOV, V.M., BUSEY, A.I., ELOBIKY, U.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11,1, 88-92
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PALLADIUM, THIAZOLE, PYRIDINE, METAL ION, PHOTOMETRIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0600 STEP NO--UR/0189/70/011/001/0088/0092
CIRC ACCESSION NO--AP0119518
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NU--AP0119518

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PD PRIME2 POSITIVE FORMED WITH 5, (2, THIAZOLYLazo), 2,6, DIHYDROXYPYRIDINE (I) TWO VIOLET 1 TO 1 COMPOS. WHICH WERE SOL. IN 4 TO 1 H SUB2 O, DIMETHYLFORMAMIDE. THE 1ST COMPD. WAS FORMED AT PH 3-7 (MAX. AT 560 NM; MOLAR ABSORPTIVITY (EPSILON) EQUALS 1.31 TIMES 10 PRIME4) AND THE 2ND IN 0.1-4.0 N H SUB2 SO SUB4 (MAX. AT 570 NM; EPSILON EQUALS 2.24 TIMES 10 NEGATIVE PRIME4). PD PRIME2 POSITIVE (10-90 MU G) WAS DETD. IN THE PRESENCE OF FE PRIME2 POSITIVE, FE PRIME3 POSITIVE, CO PRIME2 POSITIVE, NI PRIME2 POSITIVE, ZN PRIME2 POSITIVE, MN PRIME2 POSITIVE, BA PRIME2 POSITIVE, IR PRIME4 POSITIVE, RH PRIME3 POSITIVE, PT PRIME4 POSITIVE, OS PRIME4 POSITIVE, CU PRIME2 POSITIVE, AL PRIME3 POSITIVE, AND AG PRIME POSITIVE. TREAT THE H SUB2 O, DIMETHYLFORMAMIDE SOLN. CONTG. SIMILAR TO 25 MU G PD PRIME2 POSITIVE WITH H SUB2 SO SUB4 TO 1N IN H SUB2 SO SUB4 AND ADD L ML 0.012PERCENT I SOLN. IN ETUH. EXT. THE SOLN. WITH 10 ML N, AMYL ALC. AND MEASURE THE COLOR OF THE ORG. PHASE IN A 1 CM CELL AT 570 NM (EPSILON EQUALS 1.92 TIMES 10 PRIME4). THE ERROR DEPENDED ON THE AMTS. OF OTHER IONS PRESENT AND WAS PLUS 1.2PERCENT TO MINUS 24.0PERCENT.

UNCLASSIFIED

USSR

UDC 532.517.4

IVANOV, V. N., ORDANOVICH, A. Ye.

"Certain Reverse Relationships Arising in Turbulent Cellular Convection in the Atmosphere"

Tr. In-t. Eksperim. Meteorol. Gl. Upr. Gidrometeorol. Sluzhby pri Sov. Min. SSSR [Works of the Institute of Experimental Meteorology, Main Administration for the Hydrological and Meteorological Service, Council of Ministers, USSR], No 26, 1972, pp 51-58, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B827 by the author's).

Translation: The feedback mechanism developing in cellular convection in a turbulent atmosphere is analyzed. This mechanism is based on the dependence of turbulent exchange factor, determining the degree of instability of a flow by means of the Reynolds number, on external parameters (mean wind speed, boundary layer thickness) and intensity of convection arising. This feedback stabilizes convection and maintains its intensity at a given level. Consideration of the dependence of turbulent exchange factors on degree of instability allows the slight excess of experimental values of Rayleigh numbers over their critical values to be explained. 8 Biblio. Refs.

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USSR

UDC 532.596+551.46.06.8

IVANOV, V. N., MIKHAYLOV, Yu. D.

"Estimate of Rate of Dissipation of Turbulent Energy and Horizontal Turbulence Factor of Diffusion in the Baltic Sea"

Tr. Gos. Okeanogr. In-ta. [Works of State Institute of Oceanography], No 12, 1972, pp 107-113, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B477 by the author's).

Translation: Structural functions calculated on the basis of series of observations of the flow velocity modulus are used to establish the presence of an inertial interval in the mesoturbulent zone. The Kolmogorov-Obukhov relationship for structural functions is used to determine the rate of dissipation of turbulent energy within the limits of the inertial interval, amounting to $2 \cdot 10^{-4} \text{ cm}^2 \text{ sec}^{-3}$. The value found agrees satisfactorily with the data of Ozmidov and a number of other authors. Using turbulent energy and its dissipation, an attempt is made to produce estimates of the horizontal turbulence factor for diffusion, lifetime of a vortex and characteristic drift dimensions downstream in the diffusing cloud of pollutants (using dependences suggested by Ivanov for the velocity field of the wind in the lower layer of the atmosphere). The values of these characteristics found

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UDC 532.596+551.46.06.8

IVANOV, V. N., MIKHAYLOV, Yu. D., Tr. Gos. Okeanogr. In-ta, No 12, 1972,
pp 107-113.

agree satisfactorily with the results produced by other methods, for example
by observations of the actual turbulent diffusion. 24 Biblio. Refs.

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Turbine and Engine Design

UDC 539.4:621.81

USSR

IVANOV, V. N.

"General Properties of the Spectrum of the Natural Motion of Linearly Elastic Bodies Showing Cyclic Symmetry"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, No. 48, pp 184-189 (from PZh-Mekhanika, No 3, Mar 72, Abstract No 3V1374)

Translation: The dynamic properties of structures having straight or helical cylindrical symmetry are investigated, including systems with both discrete and continual elements and bonds. The interaction of regular fragments of the structure ("periods of the body") is represented by a second order symmetric matrix, the elements of which are linear operators $T_{ki}(k, i = 1, 2)$ and in problems of harmonic oscillations are functions of frequency. Using the conditions of static and kinematic compatibility in the joints between fragments and the condition of being closed, an equation is obtained for the frequencies containing a second order determinant, the elements of which are represented in terms of T_{ki} and trigonometric functions. The features are not noted in cases when the major order of symmetry is not a prime number and also the number 1 and infinity. The appearance of a multiplicity of forms of free oscillations

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USSR

IVANOV, V. N., Tr. Kuybyshev. aviats. in-t, 1971, No. 48, pp 184-189

is pointed out which take on the form of standing or traveling waves, depending on the initial conditions. The application to the calculation of oscillations of turbine rotors is kept in mind. Ya. B. L'vin.

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Ecology

UDC 551.482.2:551.311.21

USSR

POLIKARPOV, G. G., YEGOROV, V. N., ~~IVANOV, V. N.~~, TOKAREVA, A. V., and
FILIPPOV, I. A., Institute of Biology of the Southern Seas, Academy of
Sciences USSR

"Oil Fields as an Ecological Niche"

Moscow, Priroda, No 11, 1971, pp 75-78

Abstract: Observations are made on the formation, behavior, distribution and composition of oil "aggregates" collected from the surface and near-surface layers of the Central Atlantic during the 1970 cruise of the research vessel Akademik Vernadskiy. Five size groups were distinguished, ranging from those under 1 mm to 8 mm in diameter, the latter being the most numerous. Many are overgrown with periphyton, blue-green algae, diatoms, and crustaceans. By moving freely over the water in response to wave and wind, these oil aggregates can serve as indicators of currents and processes of horizontal mixing of the surface layers. Experiments on the capacity of the aggregates to concentrate cerium, ruthenium, and zinc from seawater showed them to be excellent adsorbents of these elements. This fact plus the presence of biogenous elements on the surface of the aggregates and maximum exposure to light and oxygen create favorable conditions for the development of periphyton.

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USSR

POLIKARPOV, G. G., et al., Priroda, No 11, 1971, pp 75-78

Hence, there will be an increase in the abundance of those hydrobionts which require a floating substrate. The results is likely to intensify the cycle of matter in the pleuston-neuston complex and ultimately determine the fate of the oil aggregates, themselves.

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USSR

IVANOV, V. N.

"Behavior of Type G Automata in a Matrix Game Against Automata with Linear Tactics"

Issled. po Teorii Samonastroyivayushchikhsya Sistem [Studies on the Theory of Self-Tuning Systems -- Collection of Works], Moscow, Acad. Sci. USSR Computer Center, 1971, pp 66-89, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V330).

NO ABSTRACT.

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UDC 621.372.855

USSR

KOTSONOV, N. V., IVANOV, V. N., SIDORKIN, A. F., ARTEMOV, K. S.

"Optically Controllable Semiconductor Waveguide Load"

Tr. Voronezh. un-ta (Works of Voronezh University), No 77, 1971, pp 11-18 (from
RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10B165)

Translation: The reflection of electromagnetic energy from a semiconductor-dielectric-metal structure was investigated theoretically. The relation of the reflected power to the conductance of the semiconductor material was obtained. The possibility of using this effect to create an optically controllable load for waveguide channels was demonstrated, and an experimental estimate of its parameters was made. There are 5 illustrations and a 2-entry bibliography.

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USSR

UDC: 621.372.3.092.22

IVANOV, V. M. and STARIKOVA, A. L.

"Staircase Delaying Systems with Nonmutual Ferrite Absorber"

Elektron. tekhnika. Nauchno-tekh. sb. Elektron. SVCh (Electronic Engineering, Scientific-Technical Collection, UHF Electronics) 1970, No. 12, p 79 (from Radiofizika, No 3, March 71, Abstract No. 35132)

Translation: By the perturbation method, a computation is made of nonmutual losses, dispersion characteristics, and connection resistances of staircase delay systems.

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USSR

UDC: 621.372.8.092.22

BABICHEV, R. K., IVANOV, V. N.

"The Quasistatic Theory of Lattices and its Application to Calculation of a Ladder Type Decelerating System"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 1, pp 35-45 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B107)

Translation: Excitation of an array of ideally conductive hollow structures by the field of a slow wave with high phase shift (up to π) on a period is considered in the quasistatic approximation (period much shorter than a wavelength in free space). The averaged boundary conditions for the arrays are supplemented by one more parameter, and the dependence on phase shift is determined for all parameters appearing in the boundary conditions. These conditions are then used for calculating ladder type decelerating systems with projection or indentation, and with rods of circular cross section. Four illustrations, bibliography of seven titles. Resumé.

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UDC 621.385.01

USSR

IVANOV, V. N., SLEDKOV, V. A.

"Multiconductor Line With Round Conductors Arranged in a Circle"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, No 146-148 (from RZh-Elektronika i yeye primeneniye, No 3, Mar 71, Abstract No 3A146)

Translation: To use the method of multiconductor lines for computing stub delay systems coiled into a ring, it is necessary to know the parameters of the multiconductor lines with the conductors arranged periodically in a circle. Computation of the parameters of such lines with round conductors reduces to the problem of a line with conductors of the same form arranged periodically along a straightway. Similarly a transforming function is found which establishes a connection between a multiconductor line with conductors of rectangular form and with the conductor cross sections limited by the lengths of the radius and by circular arcs.
1 ill. 6 ref. G.B.

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Hydrobiology

UDC 551.46

USSR

IVANOV, V. N., Institute of Biology of the Southern Seas under A. O. Kovalevskiy, Academy of Sciences Ukrainian SSR, Sevastopol'

"Study of the Adsorbing Surface of Suspended Matter in Sea Water With the Aid of Radioisotopes"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1141-1142

Translation: According to an evaluation by L. A. Zenkevich, the total surface area of abioses-ton in a column of water with a base of 1 m^2 to a depth of $1,000 \text{ m}$ is $10,000-40,000 \text{ m}^2$; for bacteria to a depth of $9,000 \text{ m}$, it is $400-500 \text{ m}^2$; for phytoplankton to a depth of 100 meters , it is $0.5-2.0-5.0 \text{ m}^2$ (sometimes up to 31 m^2).

We know that the biomass of organisms is distributed rather unevenly by depth, and there may be considerable accumulations at certain levels of the water. For example, in the Black Sea, the biomass of zooplankton may reach 75 g/cm^3 in the layers $2-5 \text{ m}$ deep.

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USSR

IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1441-1442

Adsorption processes play a major role in the accumulation of certain radionuclides. For example, a preponderant amount of cerium and yttrium accumulated in fish eggs is localized on the surface and is not assimilated by the embryo, that is, the processes of biological accumulation play an insignificant role in this case. The radionuclide of the biogenic element Zn^{65} is accumulated as euphausiids, not primarily by metabolism, but rather through its adsorption on the surfaces of hydrobionts. But the latter is determined by the physicochemical state of the radionuclide in sea water and the features of the adsorbing surfaces.

The distribution of radionuclides in a water-hydrobiont system depends on the value of the accumulation coefficient and the biomass of living organisms. If we know the quantity of radionuclide extracted from a known volume of water and the coefficient of hydrobiont accumulation in it, we can compute the biomass and even (in the case of an ideal, uniformly sized population) the number of individuals located, for example, in 1 m³.

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USSR

IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1441-1442

We studied simultaneously (a) the adsorption of Ce^{144} from sea water on polyfluoroethylene resin and on glass, and (b) the role of natural quantities of suspended matter in the formation of a suspended fraction of radio-cerium in sea water. The experiments were conducted during the first voyage of the research ship Akademik Vernadskiy to the tropical regions of the Atlantic in the spring of 1969.

Water was taken from the ocean surface at 1200 and 2400 hours during the daily station /station No 8, coordinates $6^{\circ}E., 1^{\circ}S.$. Five minutes after the samples were taken, 1 ml of a solution of Ce^{144} chloride (without a carrier) in distilled water was put in the experimental tanks with the water samples. The pH of the solution introduced was 1; the pH of the sea water after introduction of the radioactivity was 8. The volume of the experimental solution was 0.5 l, the activity was 10^{-6} C/l. All of the experiments were run three times.

As adsorbents, we used glass and polyfluoroethylene resin, whose adsorption qualities have been rather thoroughly studied. Five pieces of glass

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IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1441-1442

and the resin, secured in special cases, were immersed for 1 hour in the Ce^{144} solutions in sea water. After exposure, the glass and resin pieces were taken out of the solutions, rinsed once in clean sea water, dried, and measured by radiometer. Also after 1 hour, three 10-ml samples of experimental solution were taken and filtered through a No. 2 membrane filter. The filtering device was made of polyfluoroethylene resin. The area and time of contact of the sample being filtered with the walls of the instrument were known, and it was therefore possible to calculate the losses of radiocerium during filtration.

A B-2 device with an MST-17 counter encased in protective lead was used to make radiometric tests of the water samples and the glass and resin pieces. We considered the absorption of radiation in the salts of the water, and in the glass and resin. We calculated the amount of radioactive cerium which had been adsorbed in the suspended matter in the sea water and the coefficient of Ce^{144} adsorption on glass and resin (the ratio of radioactivity to 1 cm² of surface and to 1 ml of experimental solution).

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USSR

IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1441-1442

The coefficients of adsorption for 1 hour of exposure for the samples taken during the day were 0.044 ± 0.0015 on glass and 0.031 ± 0.002 on resin, while for night samples they were 0.040 ± 0.006 on glass and 0.028 ± 0.002 for the resin.

Filtering gave the following results: for the samples taken during the day, 7.6 ± 0.2 percent were filtered out, while for night samples it was 12.4 ± 0.3 percent. The difference is completely reliable: $t = 8.48$; $P \ll 0.05$.

Where pH is greater than four, the most probable state of the rare earth elements is ionic. We introduced Ce^{144} into sea water directly from an acid environment; in sea water with a pH of 8-8.2, Ce^{144} undergoes hydrolysis. The coefficients of adsorption of Ce^{144} on glass, a weak cation exchanger, are greater than on the neutral, hydrophobic surface of the resin.

Consequently, in the first hour after introduction, Ce^{144} is adsorbed on the surface in the form of hydrolytic associations, most of which, possibly, have a charge. The coefficients of adsorption of radiocerium on glass or resin

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USSR

IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol 195, No 6, 1970, pp 1441-1442

from sea water taken during the day and at night, did not differ in value, that is, the amount of radioactivity adsorbed on 1 cm² of surface was approximately equal; for the glass it was 33.4 impulses per minute, and for the resin 27. In filtering the night samples, the activity that was held back by the filter was greater by a factor of 1.84 thru that when filtering daytime samples. If it is assumed that a unit of surface of living organisms adsorbs the same quantity of Ce¹⁴⁴ as does the resin, it is possible to assess the total adsorbing surface in a unit of volume of the water samples studied by us: during the day it is 2.5 and at night it is 4.6 cm² per 1 cm³ of water. In this manner, the biomass in the surface layer (it is assumed that the size of the adsorbing surface is proportional to the biomass) is greater at night by a factor of 1.84. In this, the size of the adsorbing surface per 2 cm³ of water increases by 2.1 cm².

We know that the concentration of living organisms in the sea layer next to the surface is increased; in the pelagic layer there are accumulations of plankton organisms which conduct circadian migrations. During the day they sink to the bottom, and at night they rise to the surface. In this way, there is an

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USSR

IVANOV, V. N., Doklady Akademii Nauk SSSR, Vol. 195, No 6, 1970, pp 1441-1442

increase in the biomass and, correspondingly, in the size of the adsorbing surface per unit volume of water in the surface layer of the ocean.

Making use of the suggested method, it is possible to compare the size of the adsorbing surface in layers of water at various depths and the daily, seasonal, and geographic changes.

In conclusion, let us note that it is completely possible that there is a correlation between the size of the adsorbing surface of a known volume of water and the distribution of hydrobiological and hydrophysical indicators: productivity, transparency, and so forth.

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USSR

UDC 533.95

IVANOV, V. N., KOROTZOV, M. G.

"Arc-Burning Stability in a Direct-Current Plasmatron"

Moscow, Generatory Nizkoterperaturnoy Plazmy--Sbornik (Low-Temperature Plasma Generators -- Collection of Works), "Energiya," pp 242-244 (From Referativnyy Zhurnal, Mekhanika, No 6, 1970, Abstract No 6B80)

Translation: An investigation is made of low-frequency (of the order 1 Hz) oscillation and jumps of the electrical parameters of an arc in a linear direct-current plasmatron. As a result of the conducted experiments, it was established that jumpwise changes of the regime and low-frequency pulsations in the plasmatron are connected with shifts of the reference spot of arc in the rear electrode. These shifts are determined by the geometry of the arc chamber and by the flow of the working medium. The existence of unstable operating conditions of the plasmatron is explained by the existence of unstable arc positions, which are connected with the flow pattern in the arc chamber. It was established that electrodes profiled in a specific manner make it possible, by means of efficient organization of the flow, to reduce sharply the amplitude of the longitudinal shifts of the reference spot of the arc in the rear electrode and to make the regime a more stable one.

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UR 0482

Soviet Inventions Illustrated, Section ~~II~~ Electrical, Derwent,

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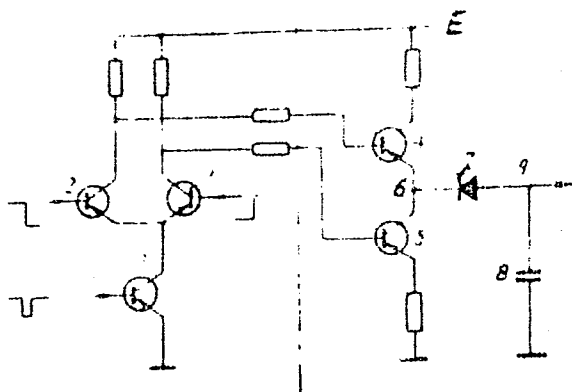
238595 PULSE-PHASE DETECTOR WITH MEMORY. In the absence of the input signal, the collectors potential of the transistors (4) and (5) is high. The transistors (4) and (5) conduct when point (6) is at the potential $E/2$. The break down voltage of the stabilizer (7) is chosen to be $E/2$. The capacitor (8) in the intervals between input pulses does not discharge when input signal (pulses) are applied to the transistor (1) and synchronizing pulses to the transistor (2) and (3), if they are not in phase, at the output will appear pulse. When transistor (1) and (2) or (1) and (3) are conducting, the capacitor (8) discharges.
2.1.67 as 1122871/26-9. V.N. IVANOV (16.9.69) Bul 10/10.3.69. Class 21a¹, 21a⁴. Int.Cl.H 03k. H 03d.

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1/2

19761695

AA0043404



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19761696

9

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ABSORPTION OF MICROQUANTITIES OF YTTRIUM,91 FROM THE SEA WATER ON
FLUOROPLASTIC,4, POLYETHYLENE AND PAPER -U-
AUTHOR-(02)-IVANOV, V.A., LYUBINOV, A.A.
COUNTRY OF INFO--USSR
SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 546-551
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY, NUCLEAR SCIENCE
AND TECHNOLOGY
TOPIC TAGS--ABSORPTION, SEA WATER, POLYETHYLENE, YTTRIUM, FILTRATION,
ISOTOPE, HYDROLYSIS, FLUORINATED ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0924 STEP NO--UR/02137/10/010/003/0546/0551
CIRC ACCESSION NO--AP0121510

2/2 027

UNCLASSIFIED

PROCESSING DATE--2000/07/0

CIRC ACCESSION NO--AP0141510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MAXIMUM OF YTTRIUM 91 ADSORPTION FROM THE SEA WATER ON FLUOROPLASTIC 4, POLYETHYLENE AND PAPER FILTERS (BLUE BAND) WAS RECORDED BY THE END OF THE THIRD DAY. THE ADSORPTION HAS THREE STAGES. BY THE END OF THE FIRST STAGE, WHICH IS OVER WITHIN APPROXIMATELY 1.5 HOURS, A SLOW GROWTH OF ADSORPTION COEFFICIENTS IS OBSERVED. A COMPLICATED DEPENDENCE OF YTTRIUM ADSORPTION ON TIME IS CAUSED BY THE CHANGE OF YTTRIUM 91 STATE IN THE SEA WATER AS HYDROLYSIS PROCEEDS. FACILITY: INSTITUT BIOLOGII YUZENYKH MOREY IN. A. J. KOVALEVSKOGO AN USSR.

UNCLASSIFIED

1/2 . 021
TITLE--OPTICAL GLASS -U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR--(05)-NIKOLINA, G.P., KHALILEV, V.D., IVANOV, V.N., PETROVSKIY,
G.T., TYLEVICH, F.G.
COUNTRY OF INFO--USSR

I

SOURCE--U.S.S.R. 267,030
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBKAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, GLASS COMPOSITION, OPTIC GLASS, CALCIUM
FLUORIDE, ALUMINUM FLUORIDE, BERYLLIUM FLUORIDE, YTTRIUM, STRONTIUM
COMPOUND, POTASSIUM COMPOUND, LANTHANUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3004/1803

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132069

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO INCREASE MOISTURE RESISTANCE AND TRANSPARENCY IN THE 165-5000 MMU LONG WAVE RANGE, AS WELL AS TO DECREASE THE CRYSTN. TENDENCY AND THE M.P., YF SUB3 5-12 MOLE PERCENT WAS ADDED TO OPTICAL GLASS CONSISTING OF: BEF SUB2 49-54, AIF SUB3 10-15, CAF SUB2 LESS THAN 12, SRF SUB2 LESS THAN 9, LAF SUB3 LESS THAN 3, AND KF 12-24 MOLE PERCENT. FACILITY: LENSIVET TECHNOLOGICAL INSTITUTE, LENINGRAD.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EXPERIMENTAL EVALUATION OF LAGRANGIAN TURBULENCE TIME SCALE -U-
AUTHOR--(03)-BYZOVA, N.L., GARGER, YE.K., IVANOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I ODEANA,
VOL VI, NO 6, 1970, PP 547-555
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--EULER EQUATION, LAGRANGE EQUATION, ATMOSPHERIC TURBULENCE,
TURBULENT MIXING, ATMOSPHERIC STRATIFICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0547 STEP NO--UR/0362/70/006/006/0547/0555
CIRC ACCESSION NO--AP0132733
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132733
ABSTRACT/EXTRACT--(U) GP-C-

ABSTRACT. EXPERIMENTAL DATA ON THE CHARACTERISTICS OF TURBULENCE IN LAGRANGIAN VARIABLES ARE PARTICULARLY IMPORTANT FOR EVALUATING TURBULENT MIXING AND DIFFUSION IN FLOWS WHERE THE GRADIENTS OF MEAN HYDRODYNAMIC FIELDS ARE ABSENT OR ARE SMALL. IN PARTICULAR, SUCH A PROBLEM ARISES IN THE BOUNDARY LAYER OF THE ATMOSPHERE IN EVALUATING DIFFUSION IN THE HORIZONTAL PLANE. IN THIS PAPER LAGRANGIAN AND EULERIAN TURBULENCE CHARACTERISTICS AT AN ALTITUDE OF ABOUT 100 M ARE EVALUATED FROM SIMULTANEOUS LAGRANGIAN AND EULERIAN MEASUREMENTS. COMPARISON OF THE VALUES OF DISSIPATION OF TURBULENT ENERGY OBTAINED FROM DATA IN THE INERTIAL RANGE USING THESE TWO INDEPENDENT METHODS REVEALED A GOOD AGREEMENT. THE LAGRANGIAN TIME SCALE WAS EVALUATED BY DIFFERENT METHODS AND THE RESULTS WERE QUITE CLOSE. THE AUTHORS DERIVE THE EXPERIMENTAL DEPENDENCE OF THE LAGRANGIAN TIME SCALE ON STRATIFICATION. FACILITY: INSTITUTE OF EXPERIMENTAL METEOROLOGY.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE MONTE CARLO TECHNIQUE AS AN APPLICATION TO THE CALCULATION OF
ABSORBED DOSES IN RADIUM TREATMENT -U-
AUTHOR--IVANOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 81-86

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA RADIATION, RADIUM ISOTOPE, RADIATION BIOLOGIC EFFECT,
NEUTRON IRRADIATION, RADIATION DOSAGE, CALCULATION, MONTE CARLO METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1962

STEP NO--UR/0241/70/015/005/0081/0086

CIRC ACCESSION NO--AP0120605

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT79

CIRC ACCESSION NO--AP0120605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES SOME MODIFICATIONS OF THE MONTE CARLO TECHNIQUE AS AN APPLICATION TO CALCULATION OF ABSORBED DOSES OF GAMMA QUANTUM AND NEUTRONS FOR PURPOSES OF RADIUM AND NEUTRON CAPTURE THERAPY. THE AUTHOR DISCUSSES GENERAL PRINCIPLES AND PRACTICAL PROBLEMS OF ELABORATION OF ACCIDENTAL VALUES IN DOSE CALCULATIONS. THE FORMULAS PRESENTED MAY BE UTILIZED IN THE SOLUTION OF DIFFERENT TASKS OF MEDICAL RADIOLOGY AND RADIOBIOLOGY.

FACILITY: INSTITUT MEDITSINSKOY RADIOLOGII AMN SSSR.

UNCLASSIFIED

1/2 053 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STUDY OF THE SPECTRA OF GASEOUS MOLECULAR LASER MIXTURES -U-

AUTHOR-(02)-IVANGV, V.N., YERYBASHEVA, L.F.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, MAR. 1970, P. 535-539

DATE PUBLISHED----MAR 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS LASER, CARBON DIOXIDE LASER, LASER RADIATION SPECTRUM, GAS
DISCHARGE, HYDROGEN, HELIUM, LINE INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1507

STEP NO--UR/0051/70/028/000/0535/0539

CIRC ACCESSION NO--AP0118494

UNCLASSIFIED

2/2 053

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUALITATIVE STUDY OF THE KINETIC CHANGES IN THE INTENSITY OF SPECTRAL LINES AND BANDS OF INDIVIDUAL MOLECULAR GASES AND MIXTURES USUALLY USED IN CARBON DIOXIDE LASERS. A SIGNIFICANT CHANGE IN THE SPECTRAL COMPOSITION OF THE RADIATION OF THE CARBON DIOXIDE-HELIUM SYSTEM DURING A GAS DISCHARGE IS OBSERVED. IT IS CONCLUDED THAT THIS CHANGE IS LARGELY DUE TO THE PRESENCE OF HYDROGEN AND HYDROGEN CONTAINING COMPLEXES IN THE HELIUM COMPONENT OF THE MIXTURE.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FABRICATION OF OHMIC CONTACTS TO GAAS IN HIGH VACUUM -U-

AUTHOR--(03)-BELEVSKIY, V.P., IVANOV, V.N., LASHNIK, V.M.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 225-227

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--METAL VAPOR DEPOSITION, GALLIUM ARSENIDE SEMICONDUCTOR,
ELECTRON BOMBARDMENT, CRYSTAL SURFACE, RESISTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1048/1547

STEP NO--00701107107 007007020470.01

CIRC ACCESSION NO--A00106221

0015411111

2/2 038

UNCLASSIFIED

PROCESSING DATE--23 OCT 73

CIRC ACCESSION NO--AP0106293

ABSTRACT/EXTRACT--(U) (P) (U) ABSTRACT. DESCRIPTION OF JOINTMENT FOR DEPOSITION OF METALLIC CONTACTS ON P OR N TYPE GASS SURFACES USING THE METHOD OF VACUUM EVAPORATION BY ELECTRON BOMBARDMENT. THE SAMPLE IS INITIALLY PURIFIED BY AN ARGON GLOW DISCHARGE, AND VAPOR DEPOSITION IS THEN CONDUCTED ON THE HEATED SEMICONDUCTOR SURFACE. THE PROCEDURE REDUCES THE WORKING TEMPERATURES TO A RANGE BETWEEN 400 AND 600 DEG C, AND IT IS POSSIBLE TO OBTAIN LOW RESISTANCE CONTACTS TO SAMPLES WITH IMPURITY CONCENTRATIONS OF 10 TO THE 13TH POWER PER CU CM.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INTENSITY OF TURBULENT ENERGY OF THE WIND SPEED LONGITUDINAL
COMPONENT IN THE BOUNDARY LAYER OF THE ATMOSPHERE -U-
AUTHOR-(02)-VOLKOVITSKAYA, Z.I., IVANOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 42-47
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--ATMOSPHERIC STRATIFICATION, PULSATION, METEOROLOGIC TOWER,
WIND VELOCITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1775 STEP NO--UR/0050/70/000/006/0042/0047
CIRC ACCESSION NO--AP0125391
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA OF TURBULENCE ENERGY INTENSITY DEPENDING UPON THE HEIGHT AND THE ATMOSPHERIC STRATIFICATION ARE GIVEN IN THE ARTICLE. THESE DATA ARE OBTAINED ON THE BASIS OF THE RESULTS OF MEASURING THE PULSATIONS OF WIND SPEED AT THE HIGH ALTITUDE METEOROLOGICAL TOWER OF THE INSTITUTE OF EXPERIMENTAL METEOROLOGY.

FACILITY: INSTITUT EKSPERIMENTAL'NOY METEOROLOGII.

UNCLASSIFIED

USSR

IVANOV, V. N., Tr. In-t eksperim. metecrol. Gl. upr. gidrometecrol. sluzh-
by pri Sov. Min. SSSR, 1972, vyp. 27, pp 12-24

2. The number of times the given level is exceeded by the "smoothed" pulsation components of wind speed. In the case of smoothing with a period τ_u , the quantity N is no longer dependent on v , and is determined by two time scales: the smoothing period τ_u and another scale which is close to the integral scale of turbulence τ_0 . The first of these scales is the decisive one.

3. The number of times the given level is exceeded by series of gusts. In this case, an approximate expression is found for N which contains the time scale T_0 equal to the period corresponding to the energy-carrying part of the spectrum.

The resultant relations can be used for scientific purposes as well as for solving a number of applied problems. Bibliography of 8 titles. Author's abstract.

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UDC 77

USSR

SOLOV'YEV, S. M., IVANOV, V. O., MAL'TSEVA, A. S.

"Effect of Gelatin on the Storage Life of Light-Sensitive Layers"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 124-133 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1336)

Translation: The effect of the selection of gelatin on the change in the properties of photoemulsion layers in storage and on certain darkening processes in them is investigated. It was shown that the choice of gelatin can have a very considerable effect. The dark discoloration and the photostability of the sensitizing dye, the oxidation products of which can react with sensitivity centers, strongly depend on the choice of gelatin. The choice of gelatin has an effect (and a very individual effect) on the sensitivity of the dye emulsions and on its storage qualities; the gelatin used in the second aging has a much greater effect on the latter than that used in the first aging. If the differences in the effect of the gelatin reduce to differences in their content of thiosulfate (I),

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USSR

SOLOV'YEV, S. M., et al., Uspekhi nauchn. fotogr., 1970, Vol. 14, pp 124-133

their effect could be simulated by an additional introduction of I into the emulsion. According to the experiments of the authors, however, the thiosulfate did not have a considerable effect on the initial sensitivity and storage qualities of optically unsensitized emulsion but had a strong and very far-ranging effect (depression or activation of sensitivity, especially by the additional emulsion) on emulsions with different dyes. The effect of thiosulfate on the aging of any optically sensitized emulsions was slight, and a clear depression appears only for very small concentrations of it. Authors abstract.

2/2

- 67 -

USSR

UDC: 543.422.08

IVANOV, V. P., FISHMAN, I. I., GALYAUTDINOV, N. G.

"Alternating-Current Arc as an Atomizer for Atomic-Absorption Analysis"

Tr. Metrol. In-tov SSSR [Works of Institutes of Metrology, USSR], 1972, No 136(196), pp 29-32 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.1074, by V. S. K.).

Translation: In order to increase the accuracy of attestation of standard specimens as to content of impurities in petroleum and petroleum products, the most accurate and sensitive methods of analysis must be used, for example spectral atomic absorption analysis. One pressing problem of atomic absorption analysis is the creation of flameless atomizers. This article reports on a newly developed atomizer using an alternating current arc and a stroboscope to filter the natural radiation of the arc. Diagrams and a description of the installation are presented. The device was used with metal and carbon electrodes (E). When carbon E were used, a solution of the element being studied was placed on the end of the lower E, preliminarily saturated with a solution of polystyrene in benzene and dried. Repeated measurements showed good reproducibility of the absorption signal and stability of the

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USSR

Ivanov, V. P., Fishman, I. I., Galyautdinov, N. G., Tr. Metrol. In-tov SSSR, 1972, No 136(196), pp 29-32.

absorption signal and stability of the installation against electrical interference. When carbon E are used, interference results from the molecular bands of NO, which is intensively formed in the arc. When the E are placed in a quartz tube with two leads for a neutral gas (such as argon), no interference to the analysis is observed. The use of metal E in atomizers did not yield positive results. 4 figures, 1 table, 3 biblio. refs.

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- 131 -

USSR

UDC 624.07:534.1

IVANOV, V. P. and PROLOV, V. A.

"The Oscillation of a Blade Rim With a Belt Connection"

Kuybyshev, Tr. Kuybyshev. aviats. in-t (Transactions of the Kuybyshev Aviation Institute), Vyp 51, 1972, pp 3-17 (from Referativnyi Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V376 by B. F. Shorr)

Translation: A system of equations of free oscillation for an elastic system consisting of a disk of arbitrary cross section with a rim and a blade, connected by a ring-shaped belt is produced by the "wave" dynamic pliability method (see Ivanov, V.P., Tr. Kuybyshev. aviats. in-t, Vyp 51, 1972). It is assumed that the order of cyclic symmetry equals the number of blades, that the disk is deformed only from its plane and that the blades buckle and twist. A matrix of the dynamic rigidity of the blades is assumed in the general case, making it possible to allow for the natural twisting of the blades. The connections are considered in the form of inertialess rods and belt strips under tension.

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- 120 -

Biophysics

USSR

KOKORIN, A. I., ZAMARAYEV, K. I., GRIGORYAN, G. L., IVANOV, V. P., and ROZANTSEV, E. G., Institute of Chemical Physics, Academy of Sciences USSR

"Measuring the Distance Between Paramagnetic Centers in Solid Solutions of Iminoxyl Radicals, Biradicals, and Spin-Labeled Proteins"

Moscow, Biofizika, No 1, 1972, pp 34-41

Abstract: The purpose of the work was to develop a method for measuring the distance between stable iminoxyl radicals from their ESR spectra and test it on the hemoglobin molecule. The mean distance r between the N and O groups of iminoxyl spin labels was determined from their spectra. The distances between the paramagnetic groups of 11 different iminoxyl biradicals were measured by 3 different methods: (a) from the values of the dipole-dipole separation, (b) from the values of the second central moment of the spectrum, and (c) from the parameter d_1/d (ratio of the total intensity of the extreme components of the spectrum to the intensity of the central component). The values of r determined by the different methods proved to be in good agreement with one another. Measurements of d_1/d showed that the distance between the N and O groups decreased after the denaturation of human hemoglobin spin-labeled at β -93 cysteine and FG-4 histidine. Dipole-dipole interaction was found to $1/2$

USSR

KOKORIN, A. I., et al., Biofizika, No 1, 1972, pp 34-41

exist between Fe^{+3} methemoglobin and the unpaired electron of the spin label attached to the SH- β -93 group.

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USSR

UDC 591.488.4-135.044:597.62

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDONSKIY, V. I.,
GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z.,
MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P.,
KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional
Morphology, Institute of Evolutionary Physiology and Biochemistry imeni
I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana temporaria* in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during 1/2

VANNING, G. A., et al., Zhurnal Evolyutsionnoy Biologii
8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

1/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--FABRICATION OF OHMIC CONTACTS TO GAAS IN HIGH VACUUM -U-

AUTHOR--(03)-BELEVSKIY, V.P., IVANOV, V.N., LASHNIK, V.M.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 225-227

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--METAL VAPOR DEPOSITION, GALLIUM ARSENIDE SEMICONDUCTOR,
ELECTRON BOMBARDMENT, CRYSTAL SURFACE, RESISTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1547

STEP NO--UR/0120/70/000/000/0225/0227

CIRC ACCESSION NO--AP0106293

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 038

CIRC ACCESSION NO--AP0106293
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DESCRIPTION OF EQUIPMENT FOR DEPOSITION OF METALLIC CONTACTS ON P OR N TYPE GASS SURFACES USING THE METHOD OF VACUUM EVAPORATION BY ELECTRON BOMBARDMENT. THE SAMPLE IS INITIALLY PURIFIED BY AN ARGON GLOW DISCHARGE, AND VAPOR DEPOSITION IS THEN CONDUCTED ON THE HEATED SEMICONDUCTOR SURFACE. THE PROCEDURE REDUCES THE WORKING TEMPERATURES TO A RANGE BETWEEN 300 AND 500 DEG C, AND IT IS POSSIBLE TO OBTAIN LOW RESISTANCE CONTACTS TO SAMPLES WITH IMPURITY CONCENTRATIONS OF 10 TO THE 13TH POWER PER CU CM.

UNCLASSIFIED

1/2 015
UNCLASSIFIED
TITLE--INTENSITY OF TURBULENT ENERGY OF THE WIND SPEED LONGITUDINAL
COMPONENT IN THE BOUNDARY LAYER OF THE ATMOSPHERE -U-
AUTHOR--(02)-VOLKOVITSKAYA, Z.I., IVANOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 42-47
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--ATMOSPHERIC STRATIFICATION, PULSATION, METEOROLOGIC TOWER,
WIND VELOCITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PAGE/FRAME--2000/1775
STEP NO--UR/0050/70/000/006/0042/0047

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA OF TURBULENCE ENERGY INTENSITY DEPENDING UPON THE HEIGHT AND THE ATMOSPHERIC STRATIFICATION ARE GIVEN IN THE ARTICLE. THESE DATA ARE OBTAINED ON THE BASIS OF THE RESULTS OF MEASURING THE PULSATIONS OF WIND SPEED AT THE HIGH ALTITUDE METEOROLOGICAL TOWER OF THE INSTITUTE OF EXPERIMENTAL METEOROLOGY.

FACILITY: INSTITUT EKSPERIMENTAL'NOY METEOROLOGII.

UDC: 551.511

USSR

IVANOV, V. N.

"Concerning the Problem of the Number of Times a Given Level is Exceeded by Pulsation Wind Speed"

Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzhby pri Sov. Min. SSSR (Works. Institute of Experimental Meteorology. Main Administration of the Hydrometeorological Service Affiliated With the Council of Ministers of the USSR), 1972, vyp. 27, pp 12-24 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B984)

Translation: Analytical expressions are derived for the following three parameters which are needed to estimate the number of times a given level u_0 is exceeded by the pulsation component of wind speed u' .

1. The number of excesses N for the unsmoothed pulsation component of wind speed. The quantity N depends on such parameters of the turbulent velocity field as the molecular viscosity ν , the rate of dissipation of turbulent energy ϵ , variance of the wind speed component σ , and the average wind speed u . For the lower layer of the atmosphere the number of excesses calculated from the derived relation comes to ~ 100 Hz.

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USSR

IVANOV, V. N., Tr. In-t eksperim. meteorol. Gl. upr. gidrometeorol. sluzh-
by pri Sov. Min. SSSR, 1972, vyp. 27, pp 12-24

2. The number of times the given level is exceeded by the "smoothed" pulsation components of wind speed. In the case of smoothing with a period τ_u , the quantity N is no longer dependent on v , and is determined by two time scales: the smoothing period τ_u and another scale which is close to the integral scale of turbulence τ_0 . The first of these scales is the decisive one.

3. The number of times the given level is exceeded by series of gusts. In this case, an approximate expression is found for N which contains the time scale T_0 equal to the period corresponding to the energy-carrying part of the spectrum.

The resultant relations can be used for scientific purposes as well as for solving a number of applied problems. Bibliography of 8 titles. Author's abstract.

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UDC 77

USSR

SOLOV'YEV, S. M., ~~IVANOV, V. O.~~, MAL'TSEVA, A. S..

"Effect of Gelatin on the Storage Life of Light-Sensitive Layers"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, PP 124-133 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1336)

Translation: The effect of the selection of gelatin on the change in the properties of photoemulsion layers in storage and on certain darkening processes in them is investigated. It was shown that the choice of gelatin can have a very considerable effect. The dark discoloration and the photostability of the sensitizing dye, the oxidation products of which can react with sensitivity centers, strongly depend on the choice of gelatin. The choice of gelatin has an effect (and a very individual effect) on the sensitivity of the dye emulsions and on its storage qualities; the gelatin used in the second aging has a much greater effect on the latter than that used in the first aging. If the differences in the effect of the gelatin reduce to differences in their content of thiosulfate (I),

their effect could be simulated by an additional introduction of I into the emulsion. According to the experiments of the authors, however, the thiosulfate did not have a considerable effect on the initial sensitivity and storage qualities of optically unsensitized emulsion but had a strong and very far-ranging effect (depression or activation of sensitivity, especially by the additional emulsion) on emulsions with different dyes. The effect of thiosulfate on the aging of any optically sensitized emulsions was slight, and a clear depression appears only for very small concentrations of it. Authors abstract.

UDC: 543.422.08

USSR

IVANOV, V. P., FISHMAN, I. I., GALYAUTDINOV, N. G.

"Alternating-Current Arc as an Atomizer for Atomic-Absorption Analysis"

Tr. Metrol. In-tov SSSR [Works of Institutes of Metrology, USSR], 1972, No 136(196), pp 29-32 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.1074, by V. S. K.).

Translation: In order to increase the accuracy of attestation of standard specimens as to content of impurities in petroleum and petroleum products, the most accurate and sensitive methods of analysis must be used, for example spectral atomic absorption analysis. One pressing problem of atomic absorption analysis is the creation of flameless atomizers. This article reports on a newly developed atomizer using an alternating current arc and a stroboscope to filter the natural radiation of the arc. Diagrams and a description of the installation are presented. The device was used with metal and carbon electrodes (E). When carbon E were used, a solution of the element being studied was placed on the end of the lower E, preliminarily saturated with a solution of polystyrene in benzene and dried. Repeated measurements showed good reproducibility of the absorption signal and stability of the

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USSR

Ivanov, V. P., Fishman, I. I., Galyautdinov, N. G., Tr. Metrol. In-tov
SSSR, 1972, No 136(196), pp 29-32.

absorption signal and stability of the installation against electrical interference. When carbon E are used, interference results from the molecular bands of NO, which is intensively formed in the arc. When the E are placed in a quartz tube with two leads for a neutral gas (such as argon), no interference to the analysis is observed. The use of metal E in atomizers did not yield positive results. 4 figures, 1 table, 3 biblio. refs.

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- 131 -

UDC 624.07:534.1

USSR

IVANOV, V. P. and FROLOV, V. A.

"The Oscillation of a Blade Rim With a Belt Connection"

Kuybyshev, Tr. Kuybyshev. aviats. in-t (Transactions of the Kuybyshev Aviation Institute), Vyp 51, 1972, pp 3-17 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4V376 by B. F. Shorr)

Translation: A system of equations of free oscillation for an elastic system consisting of a disk of arbitrary cross section with a rim and a blade, connected by a ring-shaped belt is produced by the "wave" dynamic pliability method (see Ivanov, V.P., Tr. Kuybyshev. aviats. in-t, Vyp 51, 1972). It is assumed that the order of cyclic symmetry equals the number of blades, that the disk is deformed only from its plane and that the blades buckle and twist. A matrix of the dynamic rigidity of the blades is assumed in the general form, making it possible to allow for the natural twisting of the blades. The connections are considered in the form of inertialess rods and belt strips under tension.

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Biophysics

USSR

KOKORIN, A. I., ZAMARAYEV, K. I., GRIGORYAN, G. L., IVANOV, V. P., and ROZANTSEV, E. G., Institute of Chemical Physics, Academy of Sciences USSR

"Measuring the Distance Between Paramagnetic Centers in Solid Solutions of Iminoxyl Radicals, Biradicals, and Spin-Labeled Proteins"

Moscow, Biofizika, No 1, 1972, pp 34-41

Abstract: The purpose of the work was to develop a method for measuring the distance between stable iminoxyl radicals from their ESR spectra and test it on the hemoglobin molecule. The mean distance r between the N and O groups of iminoxyl spin labels was determined from their spectra. The distances between the paramagnetic groups of 11 different iminoxyl biradicals were measured by 3 different methods: (a) from the values of the dipole-dipole separation, (b) from the values of the second central moment of the spectrum, and (c) from the parameter d_1/d (ratio of the total intensity of the extreme components of the spectrum to the intensity of the central component). The values of r determined by the different methods proved to be in good agreement with one another. Measurements of d_1/d showed that the distance between the N and O groups decreased after the denaturation of human hemoglobin spin-labeled at β -93 cysteine and FG-4 histidine. Dipole-dipole interaction was found to

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exist between Fe^{+3} methemoglobin and the unpaired electron of the spin label attached to the SH- β -93 group.

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UDC 591.488.4-135.044:597.82

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"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana*
temporaria in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate
vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs
were subjected to a 40-hour flight in the Soyuz-10, after which they were
fixed and observed with an electron microscope. Embryos in the early gastrula
stage were used to ensure that takeoff acceleration was experienced prior to
establishment of definitive vestibular apparatus, in light of evidence that
acceleration does have considerable impact on receptor cell development at
the later stages. Normal development proceeded to the tail bud stage during
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VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

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BURAKOV, V. S., MAUMENKOV, P. A., ~~IVANOV, V. P.~~, and KOLOSOVENKIY, G. A.
"Study of the Passage of High-Power Laser Radiation Through an Optically Dense Plasma"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 16, No 2, Feb 72, pp 239-242

Abstract: The article describes results of an experimental study of the passage of ruby-laser radiation (density $10^6 - 5 \cdot 10^8$ W/sq cm, duration $3 \cdot 10^{-8}$ sec) through a quasistationary plasma with a temperature of 3-4 eV and a comparatively high absorption coefficient ($4 - 7$ cm $^{-1}$). Nonlinear phenomena were found during the passage of the laser radiation through the plasma: viz., bleaching and an increase in the absorptivity of the plasma. The mechanism of the observed plasma bleaching is discussed.

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"Effect of Small Lithium Additions on the Gas Content and Mechanical Properties of Aluminum"

Ordzhonikidze, Tsvetnaya Metallurgiya, Vol 14, No 3, 1971, pp 118-121

Abstract: The effect of small additions of Li on the gas content and mechanical properties of type A7 aluminum was experimentally investigated. An addition of 0.1 wt% Li to Al results in increased H-saturation (0.2-2.5 times) in gas and electro-furnaces and in a sharp decrease of its mechanical properties, tensile strength σ_t (25-40%), residual relative elongation δ (1.5-2 times), and relative narrowing ψ (7-10 times). Remelting of Li-polluted aluminum with a high initial H-content and subsequent vacuum evaporation at 750° and residual pressure of 10 mm Hg result in an increase of δ and ψ of up to the level of analogous properties of pure Al and increase σ_t by 10-12%. The discussed effects on the mechanical properties of Al + 0.1% Li are shown. Three illustr., five biblio. refs.

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